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from the centre of gravity to the point of attachment of the string shall be three times the distance between that point and the centre of pressure.

— A recently completed iron water-tower, 250 feet high at Sheepshead Bay, near Coney Island, while being tested a few days ago, gave way at the base, and fell, shattered, to the ground when the water reached a height of 227 feet.

— The meeting of the Public health association was closed at Toronto recently. Dr. George M. Sternberg was elected president, Prof. Charles N. Hewitt first vice-president, Prof. C. A. Lindsley second vice-president, and Dr. Irving A. Watson secretary, for the coming year.

— Pretty much the whole of the September number of the *Journal of the Society for psychical research* is devoted to an interesting tale of a 'haunted house.'

— Arrangements are being made at Newcastle-upon-Tyne for holding there a mining, engineering, and industrial exhibition (international and colonial) in 1887, to mark the jubilee year of the reign of the queen.

— Dr. Schweinfurth has, says *Nature*, addressed to all Europeans, especially physicians, residing in Egypt, an inquiry as to whether, so far as they are aware, families of northern origin settling in Egypt do, or do not, die out within three generations, or whether the race is capable of being perpetuated beyond that limit.

— It is stated by the London *Engineering* that a dirigible balloon of colossal dimensions has been for some time in course of construction in Berlin. It is 500 feet in length, 50 feet in diameter, and weighs 43,000 pounds. The propelling power consists of two steam-engines of 50 horse-power each.

— In a recently patented soda-motor, intended for use on street-railways, the process of generating steam is as follows: the caustic soda, which is contained in a reservoir surrounding the steam-boiler, is raised to a high initial temperature by means of jets of burning gas or petroleum, thus evaporating all moisture from the soda. The heat from the soda produces steam in the boiler, which is applied to an ordinary engine; the exhaust steam from the engine is then absorbed by the soda, producing heat sufficient to generate steam, until the soda is supercharged with moisture, when the jets of flame, which in the mean time have been dispensed with, are again ignited to regenerate and reheat the soda. The operation may be repeated continuously. This is a modification of the soda-motors which have been in use several years past in this country and in Europe.

LETTERS TO THE EDITOR.

*.*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

How astronomers may work.

In your issue of Oct. 15, I notice the reply of Professor Holden to your comment on his scheme of inviting the leading astronomers of the world to visit Mount Hamilton, one at a time, to use the Lick telescope when not in use by the regular observers. I think Professor Holden is unfortunate in his selection of examples of good work done at high elevations. Each one of his examples might be quoted as an instance where excellent results were gained as the reward of *continuous* work by a skilled observer, using the instrument with which he was most familiar, and in a field of research where his powers of observation were at their best. Probably we should know less than we now know about radiant energy, if Mr. Burnham had gone to Mount Whitney to use the bolometer, in place of Professor Langley and Mr. Keeler. And we may be quite certain Professor Langley would not have added to his reputation, had he gone to Mount Hamilton to use Mr. Burnham's telescope, searching for double stars. Doubtless, many men will be glad to have an opportunity to look through the Lick telescope, to note how familiar objects appear when seen with an instrument of its anticipated perfection and power. But it does not seem possible that any results of scientific value can be obtained from such scrappy, disjointed work as is proposed by Professor Holden. T.

New York, Oct. 19.

Larval amblystomas for laboratory work.

During the past summer I have sent to the Smithsonian institution several hundred living specimens of larval and adult amblystomas. These were to meet the demand for these important forms on the part of special workers, and the biological laboratories both in this country and Europe, a number of them having been sent to M. Chauvin in Germany.

Quite recently, however, I have received a number of other applications from colleges and other points, requesting a few specimens of these animals for their investigations, and for the use of biological students. To meet these latter demands, I send by express to-day an unusually fine lot of some two hundred and fifty living larval amblystomas, and two adults, to Professor Baird, at the Smithsonian institution, Washington, D.C., where, if proper application be made for them, I am assured they will be sent to any point in accordance with the regulations governing the distribution of such material from that institution.

R. W. SHUFELDT.

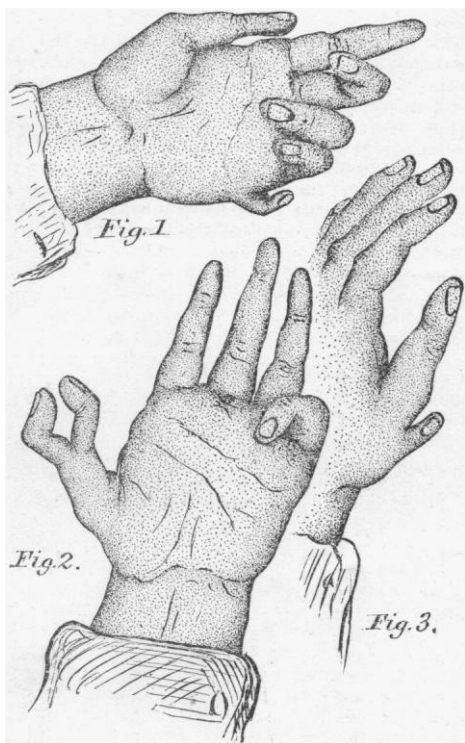
Fort Wingate, N. Mex., Oct. 8.

Polydactylism.

An instructive example of this abnormality was under my observation at about the time Dr. LeConte published his interesting letter upon the subject (*Science*, Aug. 20), and Mr. John B. Smith of the U.S. national museum, in a subsequent number, added his own observations (*Science*, Sept. 3) in regard to it.

The case I refer to is that of a man (F. G.) living

near Fort Wingate, N. Mex. He is about thirty-five years of age, and comes from a Mormon family, and is polydactylous upon both hands. His father's hands were normal; but his father's twin-brother had bud-like, nailless, supernumerary little fingers, without any bones in them. There are fourteen children in his father's family, seven of whom have normal hands, while the remaining seven have either a surplus number of fingers or toes. A sister older than himself had both extra little fingers and toes, but they had no bones in them: indeed, he is the only one of the children that possessed them in that degree of perfection. Two sisters younger than himself had supernumerary little fingers and toes, and two of his younger brothers had simply the boneless little fingers, while their feet were normal. There is no history of polydactylism on his mother's side, and he has no recollection of the condition prior to his father's twin-brother.



I carefully examined these additional little fingers in the man in question, and present with this letter, in fig. 1, the palmar aspect of his left hand, the member upon which it was best developed. It has two joints, the distal one being somewhat flexed upon the proximal one when the hand is at rest; but, as the finger is supplied by both a good flexor and extensor tendon, it can be readily moved independent of the normal digits. These tendons, as well as I could ascertain, were branch offshoots of the tendons of the flexor sublimis digitorum and the extensor minimi digiti respectively.

The proximal head of the first phalanx articulates with an extra metacarpal head, which branches from

the metacarpal bone of the little finger proper, to the outer side of its own distal head, and rather on the external aspect of the side of the shaft. No doubt the arterial supply of this extra little finger corresponds to the similar branches of the deep and superficial palmar arches, and an offshoot from the little-finger branch of the posterior carpal at the back of the hand, which go to the little finger proper.

A perfectly formed nail is found upon both of these supernumerary digits; though in some particulars the extra digit of the right hand is not as near like a normal finger as the one I have figured on the left, more especially in points of mobility and size.

Several years ago I saw a very remarkable case of polydactylism in a man of about forty-five years of age, an ignorant Irish farm-hand; and I could get nothing of the history of the inheritance of it from him. This man (P. M.) had, articulating with the distal head of the proximal phalanx of pollex, two small and supernumerary thumbs, which faced each other, as I have drawn them in fig. 2. Each of these had two joints and perfect nails, and was evidently supplied with special branch slips of tendons; as I have frequently seen the man use them as a kind of pair of forceps, and pick up, if he chose, his pipe with them. If I recollect rightly, both hands were similarly deformed. The only other record I have ever made of this case was in 1872, when I drew a rough sketch of it for Prof. Burt G. Wilder at Ithaca, who was at that time interested in such matters, and making a special collection of such data, and deformities of these members.

Supernumerary thumbs occur elsewhere on the hand, as in the case I have drawn in fig. 3. This was a boy schoolmate of mine (J. O. D.), now a prominent artist in New York, and it was early removed during childhood by amputation. If I remember correctly, his father's and mother's hands were perfect, and the deformity only occurred upon one of his own hands.

Among the vertebrates below man, we occasionally meet with cases of polydactylism, and in all vertebrates, as we know, numbers of cases where we find duplicature of entire limbs. R. W. SHUFELDT.

Fort Wingate, N. Mex., Oct. 7.

Psychology of the bear.

In *Science* for Aug. 27 is an interesting letter from James P. Marsh upon the psychology of the polar bear. The following item, bearing upon the same subject, is going the rounds of the press, and may be of interest to those familiar with the ways of animals in general, and bears in particular: A bear had been having a merry time among the sheep of the farmers of Clarendon, New Brunswick, during the summer. All attempts to catch the beast failed. Last week a trap was set, and a fence erected so that he would have to step into the trap in order to get at the bait. Bruin surveyed the situation, and concluded, after some study, that he could get over better. He went to the rear of the enclosure, dug a deep hole under the trap, and then overturned it, thus securing the bait without any injury to himself. Not to be outwitted by a bear, the farmers tried again. The old trap was left where it was, and another placed where the bear got through before. The ruse worked like a charm. Bruin came along, snuffed at the bait, and, recollecting his previous success, determined to try the back entrance. He did not see the second trap,